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Stephane Berche

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EXAMINER

KIM, CHONG R

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/813,955	Applicant(s) BERCHE ET AL.	
	Examiner Charles Kim	Art Unit 2623	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Amendment and Arguments*

1. Applicant's amendment filed on January 18, 2006 has been entered and made of record.
2. Applicant's arguments have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

Applicants argue (page 9) that their claimed invention differs from the prior art because in contrast to Takahashi, their method requires the *same* document to be involved in the "scanning, using, recognizing and storing steps/features of claims 1 and 11." The Examiner disagrees. Claim 1 recites in part, the steps of "scanning the documents," and "using a pointing device or member of the computer to designate an arbitrary point P in at least one box of the documents." Hence, the claim language does not indicate that the *same document* is scanned, recognized, and stored, as Applicants contend. Rather multiple documents are scanned, and an arbitrary point P is designated in at least one box of the multiple documents. OCR is then performed on the characters in the at least one box of the multiple documents. Note that the steps of designating the point P and performing OCR may be applied to more than one document (e.g., for the same box in each of the multiple documents).

In that case, Takahashi explains that multiple documents (figures 3-4) are scanned (col. 4, lines 59-62, col. 5, line 66-col. 6, line 3), and a pointing device is used to designate an arbitrary point P in at least one box of the documents (col. 6, lines 10-20). Takahashi also explains that the characters in the at least one box of the documents are recognized by OCR and stored in a database (col. 5, line 66-col. 6, line 3, col. 10, lines 24-41 and figure 4). Although Takahashi

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does not disclose every single feature recited in claims 1 and 11, Syeda-Mahmood corrects his deficiency, as noted in the previous office action (pages 3-5). Thus, the combination of Takahashi and Syeda-Mahmood appear to still be applicable to at least claims 1 and 11.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 22, the phrase “those next documents” in line 9 renders the claim indefinite because it is unclear which documents are being referred to. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-4, 6-11, 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takahashi et al., U.S. Patent No. 5,966,473 ("Takahashi") and Syeda-Mahmood et al., U.S. Patent No. 6,621,941 ("Syeda").

Referring to claim 1, Takahashi discloses a method of recognizing documents in a system having a scanner (26) connected to a computer, the method comprising:

- a. scanning the document (col. 4, lines 59-62);
- b. using a pointing device to designate an arbitrary point P in at least one box of the documents (col. 6, lines 10-20);
- c. recognizing by OCR the characters in the box (col. 10, lines 20-41);
- d. storing the recognized characters in a first database (col. 10, lines 26-29. Note that the recognized characters are stored in a database when they are outputted to a display screen);
- e. storing, in a second database (113) connected to the computer to store characterization data (size and position of the box) such that the box subsequently can be identified automatically by the first software without any point P within the box being designated (col. 7, line 38-col. 8, line 35).

Takahashi does not explicitly disclose that a plurality of documents are scanned, and that the stored recognized characters enable the scanned documents to be indexed. However, these features were exceedingly well known in the art. For example, Syeda discloses the steps of recognizing characters in a box of a document and storing the recognized characters in a database connected to a computer to enable a plurality of scanned documents to be indexed (col. 9, lines 9-33 and col. 15, line 60-col. 16, line 38).

Takahashi and Syeda are combinable because they are both concerned with image processing methods for document recognition. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize the stored recognized characters of Takahashi to enable scanned documents to be indexed, as taught by Syeda. The suggestion/motivation for doing so would have been to enhance the efficiency of the system by facilitating the storing of the documents (Syeda, col. 2, lines 46-63). Therefore, it would have been obvious to combine Takahashi with Syeda to obtain the invention as specified in claim 1.

Referring to claim 2, Takahashi further discloses that the designation step comprises searching for and identifying the box of the document which contains the point P designated by a user (col. 6, line 20-col. 7, line 59).

Referring to claim 3, Takahashi further discloses the step of applying a shape search algorithm over a determined search zone surrounding the point P as previously designated by the user (col. 6, line 20-col. 7, line 59 and figure 6).

Referring to claim 4, Takahashi further discloses that the shape search algorithm is a projection algorithm which counts the number of pixels present in each vertical or horizontal line of the determined search zone and which, on the basis of these count numbers, finds the horizontal and vertical lines present in the search zone by examining the peaks in the X and Y projection profiles (figure 6).

Referring to claim 6, Takahashi further discloses that the OCR step is preceded by a step in which the user defines the type of character to be recognized in the box document (col. 10, lines 20-40 and figure 10).

Referring to claim 7, see the rejection of at least claim 8 below. Takahashi and Syeda do not explicitly disclose that the scanning step is performed initially for a set of documents to be processed, with the steps of identifying the box and performing OCR being performed subsequently. Instead, the combination of Takahashi and Syeda disclose that the steps of scanning the document, identifying the box, and performing OCR are applied in sequence to the each of the documents to be processed (see the rejection of claim 8 below). Note that the essential differences between the two processes is that one process scans the entire document set initially (and then identifies the box and performs OCR), while the other process scans each document individually (and then identifies the box and performs OCR for each document). The Examiner notes that these two differences are not considered to be patentably distinct, since the specific scanning process (scanning the entire document set or scanning the documents individually) would have been chosen by the user during experimentation to meet his/her specific requirements. Therefore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform the scanning step initially for the set of documents to be processed, with the steps of identifying the box and performing OCR being performed subsequently; since no new or unexpected results are seen to be attained by performing the scanning step initially for the set of documents rather than performing the scanning step individually for each document.

Referring to claim 8, Takahashi further discloses that the scanning step is initially performed for a first document, with the steps of identifying the box and performing OCR subsequently being performed on that document so as to define a sequence (col. 4, lines 59-62,

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col. 6, line 20-col. 7, line 59, and col. 10, lines 20-41). However, Takahashi does not explicitly disclose that this sequence is repeated in succession for each of the documents to be processed.

Syeda discloses a plurality of documents to be processed, as noted above (see also col. 9, lines 35-40 and figure 8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the recognition sequence of Takahashi for the plurality of documents of Syeda. The suggestion/motivation for doing so would have been to recognize the characters for each of the documents to be processed, thereby enhancing the productivity of the system. Therefore, it would have been obvious to combine Takahashi with Syeda to obtain the invention as specified in claim 8.

Referring to claim 9, Takahashi does not explicitly disclose that the documents to be recognized and indexed are a set of technical drawings of the same or different types.

Syeda discloses documents to be recognized and indexed that are a set of technical drawings of the different types (figure 8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the document of Takahashi so that it comprises a set of technical drawings as taught by Syeda. The suggestion/motivation for doing so would have been to increase the flexibility of the system by enabling it to recognize and index a variety of different types of documents. Therefore, it would have been obvious to combine Takahashi with Syeda to obtain the invention as specified in claim 9.

Referring to claim 10, Takahashi further discloses that the documents to be recognized and indexed are a set of forms of different types (col. 3, lines 40-67).



Referring to claim 11, Takahashi discloses an apparatus for recognizing and indexing documents, the apparatus comprising:

- a. a scanner (26) for scanning a document and delivering an image of the document (col. 4, lines 59-62);
- b. a computer connected to the scanner to receive the scanned image (col. 4, lines 59-652);
- c. a first database connected to the computer for storing the scanned image (figure 1);
- d. a first software for using a pointing device to designate an arbitrary point P in at least one box of the image (col. 6, lines 10-20), for searching for and identifying the box containing the point P designated by a user (col. 6, line 20-col. 7, line 59), for recognizing by OCR the characters in the box (col. 10, lines 20-41), and for storing the recognized characters (col. 10, lines 26-29. Note that the recognized characters are stored when they are outputted to a display screen);
- e. a second database (113) connected to the computer to store characterization data (size and position of the box) such that the box subsequently can be identified automatically by the first software without any point P within the box being designated (col. 7, line 38-col. 8, line 35).

Takahashi does not explicitly state that the stored recognized characters enable the scanned images to be indexed. However, this feature was exceedingly well known in the art. For example, Syeda discloses the steps of recognizing characters in a box of an image and

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storing the recognized characters to enable scanned images to be indexed (col. 9, lines 9-33 and col. 15, line 60-col. 16, line 38).

Takahashi and Syeda are combinable because they are both concerned with image processing methods for document recognition. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize the stored recognized characters of Takahashi to enable scanned images to be indexed, as taught by Syeda. The suggestion/motivation for doing so would have been to enhance the efficiency of the system by facilitating the storing of the documents (Syeda, col. 2, lines 46-63). Therefore, it would have been obvious to combine Takahashi with Syeda to obtain the invention as specified in claim 11.

Referring to claim 13, see the rejection of at least claim 6 above.

Referring to claim 14, Takahashi further discloses that the first and second databases are integrated in a memory of the computer (col. 4, lines 32-col. 5, line 38 and figures 1-2).

Referring to claim 15, Takahashi further discloses that the pointing device is a finger of the user (col. 6, lines 10-19).

Referring to claim 16, see the rejection of at least claim 11 above.

Referring to claim 17, Takahashi further discloses that the first software includes a shape search algorithm (col. 7, line 38-col. 8, line 35. Note that the algorithm looks for a quadrilateral object).

Referring to claim 18, Takahashi further discloses that the first software includes a projection (histogram) algorithm for counting the number of pixels present in each vertical or horizontal line of a determined search zone surrounding the previously designated point P (col. 7, lines 22-59).

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Referring to claim 19, Takahashi further discloses that the projection algorithm locates, based on the counted numbers, the horizontal or vertical lines present in the search zone by analyzing peaks in X or Y projection profiles (figure 6).

Referring to claim 20, Takahashi further discloses that the characterization data is characterization data of the box having the characters (col. 7, line 38-col. 8, line 35 and figures 3-4).

Referring to claim 21, see the rejection of at least claim 20 above.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takahashi et al., U.S. Patent No. 5,966,473 ("Takahashi") and Syeda-Mahmood et al., U.S. Patent No. 6,621,941 ("Syeda"), further in view of Saitoh, U.S. Patent no. 5,220,621 ("Saitoh").

Referring to claim 5, Takahashi and Syeda do not explicitly disclose that the shape searching algorithm is an algorithm based on the Hough transform. However, this feature was exceedingly well known in the art. For example, Saitoh discloses a shape searching algorithm that is based on the Hough transform (col. 2, lines 3-7).

Takahashi, Syeda, and Saitoh are combinable because they are all concerned with image processing methods for document recognition. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the shape searching algorithm of Takahashi and Syeda so that it is based on the Hough transform, as taught by Saitoh. The suggestion/motivation for doing so would have been to provide the capability of extracting graphics of any shape, thereby enhancing the document recognition process (Saitoh, col. 2, lines

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3-15). Therefore, it would have been obvious to combine Takahashi and Syeda with Saitoh to obtain the invention as specified in claim 5.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Satoshi et al., E.P. Patent No. 0851382 ("Satoshi") and Syeda-Mahmood et al., U.S. Patent No. 6,621,941 ("Syeda").

Referring to claim 22, Satoshi discloses a method of recognizing and indexing documents in a system having a scanner connected to a computer, the method comprising:

- a. scanning a document (page 6, lines 10-12 and page 7, lines 6-7);
- b. manually designating an arbitrary point P in a predetermined area of the scanned document; if a type of the scanned document is not known (page 6, lines 12-13 and page 7, lines 45-48);
- c. identifying a box (51) around the arbitrary point P of the scanned document (col. 6, lines 14-19, page 7, lines 45-48 and figure 8);
- d. storing, in a database connected to the computer, characterization data of the identified box of the scanned document, such that boxes in next documents of a same type can be identified automatically without designation of an arbitrary point P on next documents (page 6, lines 20-23, page 7, lines 45-48 and figure 8).

Satoshi does not explicitly disclose the step of recognizing characters in the identified box of the scanned document [Note that Satoshi's identified box (51) is a block that contains the title (figure 8)]. However, this feature was exceedingly well known in the art. For example, Syeda discloses the step of recognizing characters in an identified (title) box of a document, and

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storing the recognized characters in order to index the document (col. 9, lines 9-33 and col. 15, line 60-col. 16, line 38).

Satoshi and Syeda are combinable because they are both concerned with document recognition/indexing methods. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Satoshi's method so that the characters in his title box are recognized and used to index the document, as taught by Syeda. The suggestion/motivation for doing so would have been to enhance the efficiency of the document indexing process by facilitating the storage of the documents (Syeda, col. 2, lines 46-63). Therefore, it would have been obvious to combine Satoshi with Syeda to obtain the invention as specified in claim 22.

### *Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ck

March 22, 2006

  
**JINGGE WU**  
**PRIMARY EXAMINER**